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LAHIVE & COCKFIELD 28 STATE STREET BOSTON, MA 02109			RAMPURIA, SATISH	
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			2191	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,931

Applicant(s)

ABERG, ROBERT OLSON

Examiner

Satish S. Rampuria

Art Unit

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. This action is in response to the RCE filed on Mar 10, 2006.
2. Claims amended by the Applicant: 1, 6, 12, 20, and 21.
3. Claims pending in the application: 1-21.
4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Mar 10, 2006 has been entered.

Response to Arguments

5. Applicant's arguments with respect to claim 1, 20 and 21 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-14, 16 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,901,221 to Kodosky et al., hereinafter called Kodosky, in view of US Patent No. 5,627,979 to Chang et al., hereinafter called Chang and further in view of Admitted Prior Art, hereinafter admitted prior art.

Per claims 1-5:

Kodosky disclose:

- A method of block diagram modeling in a data processing system (col. 3, lines 50-51 "The present invention provides a system for modelling a process" and col. 3, line 54 "an editor for displaying at least one diagram"), comprising:
- in a first block, receiving a first value indicative of an index into a lookup table (col. 3, lines 61-63 "an execution subsystem for assigning respective values for the one or more input variables"); and
- generating information indicative of the location of the first value relative to a predefined domain of possible indexed values that define regions (col. 8, lines 58-59 "graphical representations of input controls and output indicators are stored in a memory library" also fig. 5 and related description);
- in a second block, receiving the information generated by the first block (col. 13, lines 29-30 "output data are available for transmission to a next system" also fig. 18 and related description); and
- using the information received in the second block to determine an output value of a first lookup table (col. 13, lines 49-51 "constructing a visual display in which at least one input variable produces at least output variable according to a

displayed procedure”).

Kodosky does not explicitly disclose lookup table and index.

However, Chang discloses in an analogous computer system a table is provided to access the information stored in using various types of indexes, record identifiers, link fields and pointers (col. 3, lines 39-50 “data model... provides fixed-length records composed of data fields of various types, indexes, record identifiers and link fields, and pointer structures” and col. 4, lines 19-21 “A table may contain as many foreign keys as links it requires to relate it to other tables with which it has relationships”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of using lookup table and indexes as taught by Chang into the method of block diagram data processing as taught by Kodosky. The modification would be obvious because of one of ordinary skill in the art would be motivated to use the lookup table to map or access the information as suggested by Chang (col. 5, lines 1-10).

Neither Kodosky nor Chang explicitly disclose performing an index search operation lookup table and index.

However, admitted prior art discloses performing an index search operation lookup table and index (Applicant’s specification, page 4, lines 4-5 “The manner in which the blocks 12, 20 are defined and executed to perform an index search operation and interpolated table lookup is known in the art” See FIG. 1A-1B (prior art)).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of performing an index search operation lookup table and index taught in admitted prior art into the method of block diagram data processing as taught by the combination system by Kodosky and Chang. The modification would be obvious because of one of ordinary skill in the art would be motivated to perform index search operation to provide search in multiple interpolation blocks with common input as suggested by admitted prior art (Applicant's specification, page 1, lines 23-28).

Per claims 6 and 7:

The rejection of claim 5 is incorporated, and further, Kodosky disclose:

- receiving a value indicative of an index into the lookup table and corresponding to a different one of N dimensions (col. 3, lines 61-63 "an execution subsystem for assigning respective values for the one or more input variables");
- generating information indicative of the location of such value relative to the predefined domain of possible index values (col. 8, lines 58-59 "graphical representations of input controls and output indicators are stored in a memory library" also fig. 5 and related description); and
- in the second block, receiving the information generated by each of the N index search blocks (col. 13, lines 29-30 "output data are available for transmission to a next system" also fig. 18 and related description); and

- using the information received in the second block to determine an output value of the first lookup table (col. 13, lines 49-51 "constructing a visual display in which at least one input variable produces at least output variable according to a displayed procedure").

Kodosky does not explicitly disclose N index search block.

However, admitted prior art discloses N index search block (Applicant's specification, page 1, lines 25-26 "One type of block supported by such tools is an n-dimensional interpolation block that performs an index search operation and interpolated table lookup").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of including the N index search block as taught in admitted prior art into the method of block diagram data processing as taught by the combination system by Kodosky and Chang. The modification would be obvious because of one of ordinary skill in the art would be motivated to include N index search block to perform index search operation.

Per claims 8 and 14:

The rejection of claim 1 is incorporated, and further, neither Kodosky nor Chang disclose maintaining in a block library a pre-lookup index search block and an interpolation block that uses output of the pre-lookup index search block for interpolated

table lookup; and instantiating the index search block to create the first block and instantiating the interpolation block to create the second block.

However, admitted prior art discloses maintaining in a block library a pre-lookup index search block and an interpolation block that uses output of the pre-lookup index search block for interpolated table lookup (Applicant's specification, page 1, lines 10-12 "Such blocks may be placed in a reference library to define a graphical class. Graphical libraries are similar to system software libraries in that they are a repository of classes" and page 1, lines 25-26 "One type of block supported by such tools is an n-dimensional interpolation block that performs an index search operation and interpolated table lookup"); and instantiating the index search block to create the first block and instantiating the interpolation block to create the second block (Applicant's specification, page 1, lines 13-14 "When a graphical class is used in a model, it is said to be instantiated, i.e., an instance of the graphical class is created for use in the model")

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of maintaining in a block library and instantiating the index search block as taught in admitted prior art into the method of block diagram data processing as taught in the combination system by Kodosky and Chang. The modification would be obvious because of one of ordinary skill in the art would be motivated to maintain a block library and instantiating the index search block to provide efficiently perform the system.

Per claim 9:

The rejection of claim 8 is incorporated, and further, neither Kodosky nor Chang disclose receiving parameters from a user to instantiate the pre-lookup index search block and the interpolation block.

However, admitted prior art discloses receiving parameters from a user to instantiate the pre-lookup index search block and the interpolation block (Applicant's specification, page 1, lines 16-17 "Parameters are class member data that are specified when a user constructs a new instance of a class").

The feature of receiving parameter from user to instantiate would be obvious for the reasons set forth in the rejection of claim 8.

Per claims 10 and 13:

The rejection of claim 9 is incorporated, and further, neither Kodosky nor Chang disclose receiving comprises providing the user with a dialog box having fields for specifying values of the parameters for the pre-lookup index search block.

However, admitted prior art discloses receiving comprises providing the user with a dialog box having fields for specifying values of the parameters for the pre-lookup index search block (Applicant's specification, page 1, lines 18-20 "On a graphical user interface (or "GUI"), such parameter specification interfaces take the form of a dialog box with various parameter entry fields").

The feature of receiving parameter from user via dialog box would be obvious for the reasons set forth in the rejection of claim 8.

Per claim 11:

The rejection of claim 9 is incorporated, and further, neither Kodosky nor admitted prior art disclose receiving comprises providing the user with a textual API for programmatically specifying values of the parameters.

However, Chang discloses in an analogous computer system receiving comprises providing the user with a textual API for programmatically specifying values of the parameters (col. 8, lines 36-39 "To accomplish this object manipulation through data store access, the Smart Access graphical user interface 310 calls an object-oriented application programming interface (API), Object Call Level Interface, OCLI, 320").

The feature of using API to specify parameter value would be obvious for the reasons set forth in the rejection of claim 8.

Per claim 12:

The rejection of claim 9 is incorporated, and further, neither Kodosky nor Chang disclose the parameters for the pre-lookup index search block comprise breakpoint data.

However, admitted prior art discloses wherein the parameters for the pre-lookup index search block comprise breakpoint data (Applicant's specification, page 1, line 27 "breakpoint data sets have to perform identical index search operations").

The feature of search block comprise breakpoint data would be obvious for the reasons set forth in the rejection of claim 8.

Per claim 16:

The rejection of claims 1 is incorporated, and further, Kodosky disclose:

- using the graphical block diagram of the graphical block diagram model as a specification for interpretation by automatic code generation software that generates code to perform computations equivalent to computations performed by the graphical block diagram model (col. 35, lines 57-67 section, Code Generation "Once the data store schema is mapped to the object schema, the user may use code generators 410 or 420 to generate data access methods for each object interface... the user may have created classes MyEmp and MyDept, created tables EMP and DEPT, and mapped MyEmp to EMP and MyDept to DEPT..." also fig. 5 and related discussion).

Per claim 19:

Neither Kodosky nor Chang disclose maintaining in a block library an index search block and an interpolation block that uses output of one or more pre-lookup index search blocks; and enabling a user to use the pre-lookup index search and interpolation blocks to build a graphical block diagram model.

However, admitted prior art discloses maintaining in a block library an index search block and an interpolation block that uses output of one or more pre-lookup

index search blocks (Applicant's specification, page 1, lines 10-12 "Such blocks may be placed in a reference library to define a graphical class. Graphical libraries are similar to system software libraries in that they are a repository of classes" and page 1, lines 25-26 "One type of block supported by such tools is an n-dimensional interpolation block that performs an index search operation and interpolated table lookup"); and enabling a user to use the pre-lookup index search and interpolation blocks to build a graphical block diagram model (Applicant's specification, page 1, lines 13-14 "When a graphical class is used in a model, it is said to be instantiated, i.e., an instance of the graphical class is created for use in the model").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of maintaining in a block library and instantiating the index search block as taught in admitted prior art into the method of block diagram data processing as taught in the combination system by Kodosky and Chang. The modification would be obvious because of one of ordinary skill in the art would be motivated to maintain a block library and instantiating the index search block to provide efficiently perform the system.

Claim 20 is the computer program product claim corresponding to method claim 1 and rejected under the same rationale set forth in connection with the rejection of claim 1 above.

Claim 21 is the system claim corresponding to method claim 1 and rejected under the same rationale set forth in connection with the rejection of claim 1 above.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kodosky in view of Chang and further in view of US Patent No. 5,481,741 to McKaskle et al. (hereinafter called McKaskle).

Per claim 15:

The rejection of claim 6 is incorporated, and further, neither Kodosky nor Chang explicitly disclose wherein the generated information comprises a breakpoint data set index value and a distance fraction value for each dimension and corresponding input value chosen by the user.

However, McKaskle discloses in an analogous computer system wherein the generated information comprises a breakpoint data set (col. 33, lines 49-52 "A "breakpoint" may be set so that a reserved VI enters its "suspended" state when it is about to execute") index value and a distance fraction value for each dimension (col. 62, lines 59-63 "The top input being the actual array, and the bottom input, which receives a 1, being the index where the array is split. The output of this function is two, separate, one dimensional arrays") and corresponding input value chosen by the user (Abstract "A system and method for providing attribute nodes in a data flow diagram which allow a user to programmatically access various parameters of a control or indicator").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of having breakpoint data set index value and a distance fraction value for each dimension and corresponding input value chosen by the user as taught in McKaskle into the method of block diagram

data processing as taught in the combination system by Kodosky, Chang, and admitted prior art. The modification would be obvious because of one of ordinary skill in the art would be motivated to having breakpoint data index value chosen by user to provide enhance technique to user to programmatically control the appearance of the from panel during the execution as taught by McKaskle (col. 5, lines 35-45).

9. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodosky in view of admitted prior art and further in view of McKaskle.

Per claim 17:

Kodosky discloses:

- A method of graphical block diagram processing (col. 3, lines 50-51 "The present invention provides a system for modelling a process" and col. 3, line 54 "an editor for displaying at least one diagram"), comprising;
- receiving as an input a block diagram model that includes interpolation lookup blocks which each perform index search operations and interpolated table lookup (col. 3, lines 61-63 "an execution subsystem for assigning respective values for the one or more input variables");

Kodosky does not explicitly disclose detecting if the interpolation lookup blocks have shared input values and breakpoint data sets.

However, McKaskle discloses in an analogous computer system detecting if the interpolation lookup blocks have shared input values and breakpoint data sets (col. 33,

lines 49-52 "A "breakpoint" may be set so that a reserved VI enters its "suspended" state when it is about to execute"). It is interpreted that values must be shared with breakpoint data sets.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of having breakpoint data set shared by lookup blocks as taught in McKaskle into the method of block diagram data processing as taught in the by Kodosky. The modification would be obvious because of one of ordinary skill in the art would be motivated to having breakpoint data index value shared to provide enhance technique to user to programmatically control the appearance of the from panel during the execution as taught by McKaskle (col. 5, lines 35-45).

Kodosky does not explicitly disclose the interpolation lookup blocks are connected to at least one index search block which performs index search operations, the index search block providing an input value and breakpoint data set to any connected interpolation lookup block; interpreting the block diagram model as if the block diagram model included separate index search blocks and interpolated lookup blocks.

However, admitted prior art discloses the interpolation lookup blocks are connected to at least one index search block which performs index search operations, the index search block providing an input value and breakpoint data set to any connected interpolation lookup block (Applicant's specification, page 1, lines 10-12

“Such blocks may be placed in a reference library to define a graphical class. Graphical libraries are similar to system software libraries in that they are a repository of classes” and page 1, lines 25-26 “One type of block supported by such tools is an n-dimensional interpolation block that performs an index search operation and interpolated table lookup” and (Applicant’s specification, page 1, lines 13-14 “When a graphical class is used in a model, it is said to be instantiated, i.e., an instance of the graphical class is created for use in the model”); interpreting the block diagram model as if the block diagram model included separate index search blocks and interpolated lookup blocks (Applicant’s specification, page 1, lines 10-12 “Such blocks may be placed in a reference library to define a graphical class. Graphical libraries are similar to system software libraries in that they are a repository of classes” and page 1, lines 25-26 “One type of block supported by such tools is an n-dimensional interpolation block that performs an index search operation and interpolated table lookup”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of interpreting the block diagram model as if the block diagram model included separate index search blocks and interpolated lookup blocks as taught in admitted prior art into the method of block diagram data processing as taught in the combination system by Kodosky and McKaskle. The modification would be obvious because of one of ordinary skill in the art would be motivated to interpreting a block diagram and instantiating the index search block to provide efficiently perform the system.

Per claim 18:

The rejection of claim 17 is incorporated, and further, Kodosky disclose:

- using the interpreted graphical block diagram by automatic code generation software that generates code to perform computations equivalent to computations performed by the graphical block diagram model (col. 35, lines 57-67 section, Code Generation "Once the data store schema is mapped to the object schema, the user may use code generators 410 or 420 to generate data access methods for each object interface... the user may have created classes MyEmp and MyDept, created tables EMP and DEPT, and mapped MyEmp to EMP and MyDept to DEPT..." also fig. 5 and related discussion).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Satish S. Rampuria** whose telephone number is **(571) 272-3732**. The examiner can normally be reached on **8:30 am to 5:00 pm** Monday to Friday except every other Friday and federal holidays. Any inquiry of a general nature or relating to the status of this application should be directed to the **TC 2100 Group receptionist: 571-272-2100**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Wei Y. Zhen** can be reached on **(571) 272-3708**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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